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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/456,371	12/08/1999	HEINRICH BOLLMANN	12010	6395

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EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

NOTIFICATION DATE	DELIVERY MODE
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10/03/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 09/456,371	Applicant(s) BOLLMANN ET AL.	
	Examiner Victor S. Chang	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,20,22,23 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,20,22,23 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. In view of the Appeal Brief filed on 8/27/2007, PROSECUTION IS HEREBY REOPENED. The reopen is necessary because upon a careful review, the rejection over claim 30 is found not being repeated in the Final action mailed 9/25/2006. The examiner apologizes for the inadvertent error. Complete grounds of rejections for all the claims are set forth below. It should be noted that in the Appeal Brief, both the "Status of Claims" and the "Grounds of Rejection to be Reviewed on Appeal" contain errors of including claim 23 under the rejection over Renzo reference. The errors must be corrected in the next reply.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Terrel Morris/
Terrel Morris
Supervisory Patent Examiner
Group Art Unit 1771

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 19, 20, 22, 23 and 30 are active.

Claim Rejections - 35 USC § 112

4. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

More particularly, the examiner maintains (see Office action mailed 9/28/2005, page 3) that in claim 23 (added 9/7/2001) the limitation “elastomer layer is bonded to an outer surface of said molding” is new matter, because nowhere can a support for such a structural relationship be found in the original specification. Applicants must provide an evidentiary support that the inventors, at the time the application was filed, had possession of the claimed invention.

5. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More particularly, the claimed limitation “elastomer layer is bonded to an outer surface of said molding” is vague and indefinite, because the specification lacks any disclosed structural relationship which can be reasonably interpreted as a support for the claimed limitation, nor is any definition regarding which side of a molding component in a damping element is considered to be an “outer surface”.

Rejections Based on Prior Art

6. Claims 19, 20 and 22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Renzo [FR 2559862A, Derwent abstract].

Renzo's invention relates to a composite shock absorber. Figs. 5 and 6 illustrate that the shock absorber comprises an expanded polyurethane (foamed PU) inside a bellows 50. The bellows 50 is a molded thermoplastic polyurethane (TPU) resin. The foamed PU is developed within (foamed *in situ*) and bonded to the internal surface of bellows 50. The foam density or density distribution produces the required overall dynamic compression/stiffness curve. The composite shock absorber is used in a vehicle suspension system.

For claims 19 and 22, Renzo is silent about: 1) the thickness of the bellows and 2) the foamed PU is chemically bonded to the TPU of bellows. However, regarding 1), since Renzo discloses the same subject matter for the same end use (a shock absorber for a vehicle suspension system) as the claimed invention, a workable bellows thickness is deemed to be either anticipated by Renzo, or obviously provided by practicing the invention of prior art for the same end use. Regarding 2), since Renzo teaches the same *in situ* foaming process and the same chemistry for all the components in the shock absorber as the claimed invention, the type of the

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bonding is deemed to be inherently the same. Regarding the terms “rigid” and “flexible” in claim 19 (added in an amendment filed 2/23/2006), since the only presence of these terms in the present application are found in the description of prior art of metal/rubber composite, and described as rigid/flexible elements [specification, pp. 1, ll. 28-31], and throughout the specification there is no standard set forth in the specification what amounts to be “rigid” thermoplastic polyurethane molding or “flexible” microcellular polyurethane elastomer layer, these terms are interpreted as merely general material properties of the solid (less deformable, i.e., rigid) polyurethane molding and the shock-absorbing foamed (more deformable, i.e., flexible) polyurethane. In other words, these properties are inherently disclosed by Renzo’s composite, because these components have the same compositions as the claimed invention.

For claim 20, Renzo is silent about the density of the PU foam and its various mechanical properties. However, since Renzo teaches that the foam density or density distribution produces the required overall dynamic compression/stiffness curve, a workable density and its resultant mechanical properties of the PU foam are deemed to be either anticipated, or obviously provided by practicing the invention of prior art, dictated by the same utility as the claimed invention.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Renzo [FR 2559862A, Derwent abstract] in view of Zeitler et al. [US 5,288,549].

The teachings of Renzo are again relied upon as set forth above.

For claim 30, Renzo is silent about the ratio of the isocyanate groups to isocyanate reactive groups. However, Zeitler’s invention relates to a composite comprising foamed PU layer and TPU elastomer [col. 1, ll. 7-10; col. 2, ll. 39-40]. The TPU elastomer is made from a mixture having isocyanate (NCO) groups and hydroxyl (OH) groups (i.e., isocyanate reactive

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groups) at a ratio of 0.85:1 to 1.1:1, and it provides required rigidity in the composite [column 3, lines 15-23]. It would have been an obvious routine optimization to one of ordinary skill in the art to make the TPU elastomer in Rezo's composite by selecting a workable NCO/OH ratio, as taught by Zeitler, because the selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07.

Response to Argument

7. In response to the 112, 1st paragraph rejection over claim 23, applicants argue [Brief pp. 5] that

The specification as originally filed does not limit the configuration or orientation of the thermoplastic polyurethane molding and the microcellular polyurethane elastomer layer. It is only necessary to bond the elastomer layer in direct contact with the at least one surface of the molding. Thus, the specification as originally filed has implicit support for any orientation, including the elastomer layer bonded to an outer or an inner surface of the molding.

However, even if the TPU and foamed PU components of present invention are considered as replacements of the metal and rubber components of various conventional vehicle shock absorbers, still a structural support for the limitation in claim 23 must be provided. Mere speculation that such a configuration might have existed in some damping element is insufficient. Further, there is no disclosure or evidence in the specification that such a proposed replacement would work successfully for all types of vehicle damping elements in their intended applications. Therefore randomly pick and choose a known configuration without evidence that the replacement would work for the intended application is insufficient as a support.

Applicants argue [pp. 5] that Fig. 1.10 of Exhibit A page 13 illustrates rubber supported both on an inner face of one metal and an outer face of another metal. However, the text of Fig. 1.10 explains that it shows a vehicle body spring (metal) and shock absorber (rubber) assembly, with the body spring capable of taking forces of approximately 700N and above. It is unseen how the TPU elastomer of claimed invention is capable of meeting the stringent property requirement of a vehicle metal body spring to withstand the repeated high forces in use. There is no evidence such a replacement would be successful and the example appears to be inappropriate. Further, contrary to applicants' argument, even if Fig. 1.10 is considered, the text of Fig. 1.10 expressly states that the shock absorber bearing is an inner element, i.e., in contact with the inner face of the metal components. Applicants' argument amounts to pick and choose any metal component surface without clearly defining what is an "outer surface" of the metal components. Similarly, applicants' arguments [pages 5-6] relating to Figs. 3.85 and 5.54 fail to show any evidence that such proposed replacements would be successful for intended applications, nor the assemblies shown in these drawings provide a support for the recited limitation in claim 23, because they all show that the rubber component is sandwiched between metal components.

Applicants argue [pp. 5-10] that Renzo provides a flexible TPU bellows 50 about a flexible cellular elastomer, because Renzo's bellows is compressible and therefore flexible. However, since the only presence of the terms "rigid" and "flexible" in the present application are found in the description of prior art of metal/rubber composite, and described as rigid/flexible elements [specification, pp. 1, ll. 28-31], and throughout the specification there is no standard set forth in the specification what amounts to be "rigid" thermoplastic polyurethane molding or

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“flexible” microcellular polyurethane elastomer layer, these terms are interpreted as merely general material properties of the solid (less deformable, i.e., rigid) polyurethane molding and the shock-absorbing foamed (more deformable, i.e., flexible) polyurethane. In other words, these properties are inherently disclosed by Renzo’s composite, because these components have the same compositions as the claimed invention. Applicants’ argument directed to the compressed state of bellow structure ignore that fact that the claim language fails to limit the term “rigid” to any specific structure. The examiner asserts that Renzo’s invention either anticipates, or renders obvious the claimed invention as set forth above.

Applicants argue [pp. 13] that

when viewing the claimed invention as a whole, the subject invention claims a replacement for well known metal-rubber damping elements comprising a rigid thermoplastic polyurethane molding that supports a flexible microcellular polyurethane elastomer layer such that the flexible microcellular layer dampens and absorbs vibrations occurring within the transverse link, the longitudinal link, the triangular link, the rear-axle subframe, the stabilizer, the spring-strut support, or the shock-absorber. When viewing Renzo as whole and without impermissible hindsight, Renzo merely discloses a shock absorber to absorb shock formed from a flexible bellow 50 that must be able to compress and distribute the shock to a cellular elastic 51.

However, applicants are reminded that the claimed invention is not limited to be a replacement for known metal/rubber damping elements. Further, even if only replacement applications are being considered, nowhere is there any disclosure in the specification suggests that such a proposed replacement would work for all types of known metal/rubber damping elements for intended applications. Applicants ignore the fact that the metal components in a vehicle damping elements generally requires the durability and capability to withstand high forces, as evidenced by applicants’ Exhibit A. Even if a TPU is characterized as being a “rigid” material, it is well known to one skilled in the art that a metallic material generally has much greater rigidity

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than a TPU elastomer, and it is unseen that a TPU replacement would have met the stringent requirements for all types of vehicle damping elements for their intended applications. It is insufficient to indiscriminately pick and choose any known vehicle damping element as a support for the claimed invention. Evidence of successful workability must be provided.

Applicants argue [pp. 14] that the examiner's modification of Renzo employs impermissible hindsight and does not consider the claimed invention as a whole. However, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. Since the present Office action takes into account only knowledge which was within the level of ordinary skill at the time the invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1771

9/29/07